

a fourth step of detecting said labeled mRNA by irradiating light to the live cell group containing live cells having the hybrid and by identifying live cells which cause a change in fluorescence of said fluorescent dye based on formation of the hybrid, and separating the identified live cells selectively from said live cell group.

12. (New) The method according to claim 11, wherein the probe comprises a first probe and a second probe, the first probe and the second probe have base sequences complementary to said mRNA and capable of hybridizing thereto adjacently, and the first probe is labeled with an energy donor fluorescent dye and the second probe is labeled with an energy acceptor fluorescent dye, and said change in fluorescence is caused by fluorescence resonance energy transfer (FRET) from the energy donor fluorescent dye of the first probe to the energy acceptor fluorescent dye of the second probe.

13. (New) A method for selectively separating live cells which have expressed mRNA encoding interleukin-2 (IL-2) comprising:

a first step of introducing a probe capable of labeling mRNA into cells in a live cell group containing live cells which have expressed the specific mRNA;

wherein the probe comprises a first probe having the base sequence set forth in SEQ ID NO:9 in the Sequence Listing and the second probe having a base sequence set forth in SEQ ID NO:10 in the Sequence Listing each labeled with a fluorescent dye, the first probe and the second probe have base sequences complementary to said mRNA and capable of hybridizing thereto adjacently, and the first probe is labeled with an energy donor fluorescent dye and the second probe is labeled with an energy acceptor fluorescent dye;

a second step of labeling said mRNA with said probe to obtain a live cell group containing live cells having the labeled mRNA which is a hybrid of the probe and said mRNA; and

a third step of detecting said labeled mRNA by irradiating light to the live cell group containing live cells having the hybrid and by identifying live cells which cause a change in fluorescence of said fluorescent dye based on formation of the hybrid due to fluorescence resonance energy transfer (FRET) from the energy donor fluorescent dye of the first probe to the energy acceptor fluorescent dye of the second probe, and separating the identified live cells selectively from said live cell group.

14. (New) A method for selectively separating live cells which have expressed mRNA encoding interleukin-4 (IL-4) comprising:

a first step of introducing a probe capable of labeling mRNA into cells in a live cell group containing live cells which have expressed the specific mRNA;

wherein the probe comprises a first probe having the base sequence set forth in SEQ ID NO:17 in the Sequence Listing and a second probe having the base sequence set forth in SEQ ID NO:18 in the Sequence Listing each labeled with a fluorescent dye, the first probe and the second probe have base sequences complementary to said mRNA and capable of hybridizing thereto adjacently, and the first probe is labeled with an energy donor fluorescent dye and the second probe is labeled with an energy acceptor fluorescent dye;

a second step of labeling said mRNA with said probe to obtain a live cell group containing live cells having the labeled mRNA which is a hybrid of the probe and said mRNA; and

a third step of detecting said labeled mRNA by irradiating light to the live cell group containing live cells having the hybrid and by identifying live cells which cause a change in fluorescence of said fluorescent dye based on formation of the hybrid due to fluorescence resonance energy transfer (FRET) from the energy donor fluorescent dye of the first probe to the energy acceptor fluorescent dye of the second probe, and separating the identified live cells selectively from said live cell group.

15. (New) The method according to claim 11, wherein the selective separation in said third step of said live cells based on the change in fluorescence is performed by a cell sorter.

16. (New) The method according to claim 11, wherein said mRNA is a mRNA encoding a cytokine.

17. (New) The method according to claim 11, wherein the live cells selectively separated in said third step are T Helper 1 (TH1) cells.

18. (New) The method according to claim 1, wherein the live cells selectively separated in said third step are T Helper 2 (TH2) cells.

REMARKS

Discussion of Claim Amendments

Claims 1-10 have been canceled and new claims 11-18 have been provided to expedite the prosecution of the application. Claims 11-18 are supported by the original claims and the specification, e.g., page 43, line 1 to page 44, line 12. No new matter has been added.